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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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09/985,927

11/06/2001

Naoki Shibata

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909 7590 07/09/2003

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EXAMINER

SEFER, AHMED N

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 07/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/985,927

Applicant(s)

SHIBATA ET AL.

Examiner

A. Sefer

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirements.

NATHAN J. FLYNN

SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/10/03 has been entered and new claims 9-18 have been added.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 5-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Koide US Patent No. 6,580,098.

Koide discloses in figs. 1-3 a group III nitride compound semiconductor device comprising a substrate on which a first environment division A and a second

Art Unit: 2826

environment B division are formed; and a group III nitride compound semiconductor layers 3 formed on said first environment division so as to serve as effective semiconductor layers, wherein said first environment division comprises an outer shape having rounded corners.

As to claim 6, Koide discloses a first environment division which is in a state in which a surface of said substrate is exposed before said group III nitride compound semiconductor layers are formed.

As to claim 7, Koide discloses a second environment division made of a material, which prevents said group III nitride compound semiconductors from being grown on said material.

As to claim 8, Koide discloses a second group III nitride compound semiconductor layer 2, which is amorphous or different in crystallinity from said group III nitride compound semiconductor layers grown on said first environment division, is grown on said second environment division.

4. Claims 5-7 are rejected under 35 U.S.C. 102(e) as being anticipated by Shealy et al. US Patent No. 6,478,871.

Shealy et al disclose in figs. 1 and 2 a group III nitride compound semiconductor device comprising a substrate on which a first environment division 13 and a second environment division 12 are formed; and a group III nitride compound semiconductor layers 14 formed on said first environment division so as to serve as effective semiconductor layers, wherein said first environment division comprises an outer shape having rounded corners.

As to claim 6, Shealy et al disclose a first environment division which is in a state in which a surface of said substrate is exposed before said group III nitride compound semiconductor layers are formed.

As to claim 7, Shealy et al disclose a second environment division made of a material, which prevents said group III nitride compound semiconductors from being grown on said material.

5. Claims 9-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Nishinaga US Patent No. 6,368,733.

Nishinaga discloses (see figs. 1 and 2 and claim 7) a semiconductor device structure having a first portion and a plurality of second portions, said structure comprising a substrate; a separating layer 12 formed directly (as in claim 16) over said substrate and defining a plurality of openings respectively formed in said plurality of second portions, wherein at least one opening 1 or plurality of openings (as in claim 15) in said plurality of openings comprises a rounded shape.

As to claims 10-14, the specification contains no disclosure of either the critical nature of the claimed arrangement or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

As to claim 14, Nishinaga discloses (see col. 10, lines 64-67) a metal nitride undercoat over said substrate in said plurality of openings.

6. Claims 17 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Nishinaga US Patent No. 6,368,733.

Nishinaga discloses (see figs. 1, 2, col. 3, lines 53-60 and claim 7) a method of forming a semiconductor device structure having a first portion and a plurality of second portions, said method comprising: forming a separating layer 12 over a substrate; forming a mask 2/13 over

said separating layer; etching said separating layer using said mask to create a plurality of openings in said separating layer; and rounding at least one opening in said plurality of openings such that said at least one opening has a rounded shape.

As to claim 18, Nishinaga discloses forming a separating layer comprising forming said separating layer directly on said substrate, and wherein forming said mask over said separating comprises forming said mask directly on said separating layer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (703) 605-1227.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (703) 308-6601.

ANS

June 27, 2003